1. Solve the quadratic equation below. Then, choose the intervals that the solutions x_1 and x_2 belong to, with $x_1 \leq x_2$.

$$20x^2 - 81x + 81 = 0$$

A. $x_1 \in [0.67, 0.8]$ and $x_2 \in [5.39, 5.97]$

B. $x_1 \in [35.85, 36.16]$ and $x_2 \in [43.26, 46.08]$

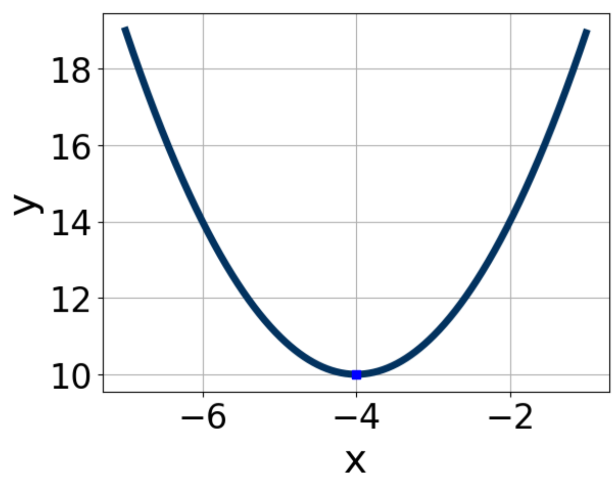
C. $x_1 \in [1.78, 1.98]$ and $x_2 \in [2, 3.05]$

D. $x_1 \in [0.55, 0.68]$ and $x_2 \in [5.91, 7.68]$

E. $x_1 \in [0.29, 0.56]$ and $x_2 \in [8.36, 9.44]$

---

2. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that $a, b,$ and c belong to.



A. $a \in [-0.1, 1.3], \quad b \in [-9, -6], \text{ and } \quad c \in [3, 8]$

B. $a \in [-0.1, 1.3], \quad b \in [2, 11], \text{ and } \quad c \in [25, 28]$

C. $a \in [-0.1, 1.3], \quad b \in [-9, -6], \text{ and } \quad c \in [25, 28]$

D. $a \in [-1.2, 0.3], \quad b \in [-9, -6], \text{ and } \quad c \in [-7, -3]$

E. $a \in [-1.2, 0.3], \quad b \in [2, 11], \text{ and } \quad c \in [-7, -3]$

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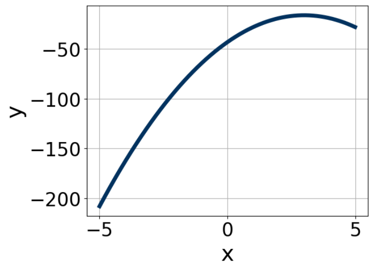
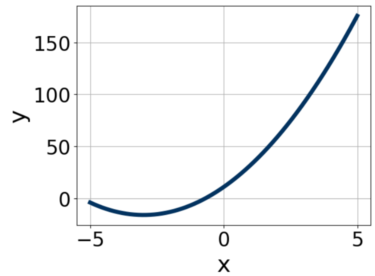
3. Graph the equation below.

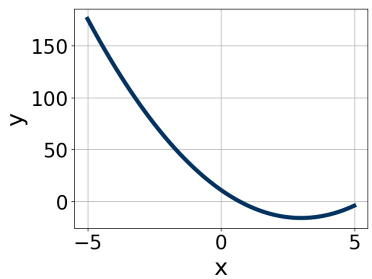
$$f(x) = (x-3)^2 - 16$$



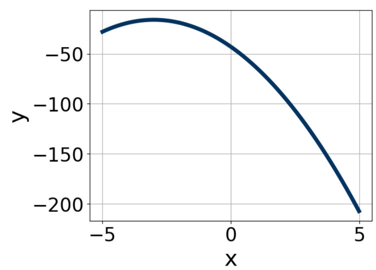
A.



C.



B.



D.

E. None of the above.

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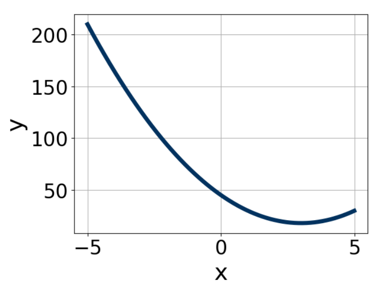
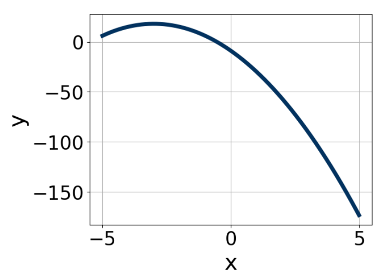
4. Graph the equation below.

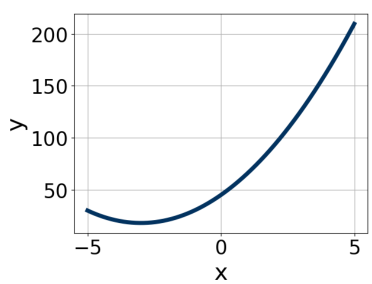
$$f(x) = (x+3)^2 + 18$$



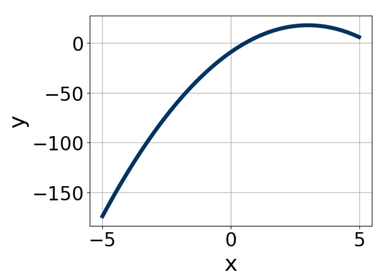
A.



C.



B.



D.

E. None of the above.

---

5. Solve the quadratic equation below. Then, choose the intervals that the solutions x_1 and x_2 belong to, with $x_1 \leq x_2$.

$$15x^2 + 32x + 16 = 0$$

A. $x_1 \in [-1.45, -0.81]$ and $x_2 \in [-0.89, -0.72]$

B. $x_1 \in [-20.22, -19.79]$ and $x_2 \in [-12.21, -11.95]$

C. $x_1 \in [-4.39, -3.78]$ and $x_2 \in [-0.39, -0.18]$

D. $x_1 \in [-2.77, -2.25]$ and $x_2 \in [-0.46, -0.34]$

E. $x_1 \in [-2.04, -1.51]$ and $x_2 \in [-0.67, -0.49]$

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6. Solve the quadratic equation below. Then, choose the intervals that the solutions belong to, with $x_1 \leq x_2$ (if they exist).

$$16x^2 + 11x - 8 = 0$$

A. $x_1 \in [-1.2, -0.7]$ and $x_2 \in [-0.92, 0.61]$

B. $x_1 \in [-26.1, -24.8]$ and $x_2 \in [23.7, 25.07]$

C. $x_1 \in [-18.2, -17.6]$ and $x_2 \in [7.04, 7.33]$

D. $x_1 \in [-0.9, 1.3]$ and $x_2 \in [0.79, 1.41]$

E. There are no Real solutions.

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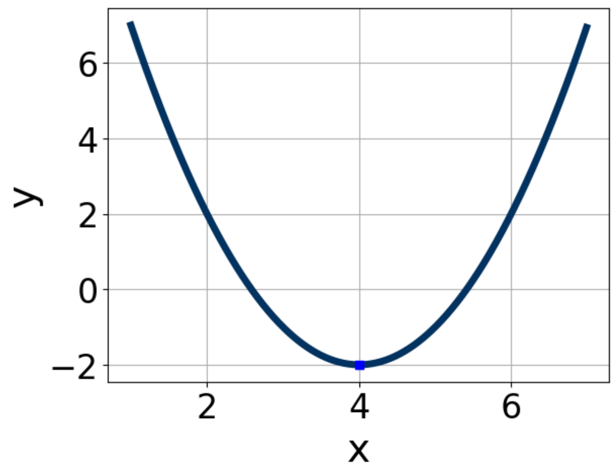
7. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that a, b, and c belong to.



A. $a \in [-0.9, 1.7], \quad b \in [-8, -5], \text{ and } \quad c \in [13, 15]$

B. $a \in [-0.9, 1.7], \quad b \in [6, 10], \text{ and } \quad c \in [13, 15]$

C. $a \in [-2.4, 0.4], \quad b \in [6, 10], \text{ and } \quad c \in [-18, -16]$

D. $a \in [-2.4, 0.4], \quad b \in [-8, -5], \text{ and } \quad c \in [-18, -16]$

E. $a \in [-0.9, 1.7], \quad b \in [6, 10], \text{ and } \quad c \in [17, 20]$

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8. Factor the quadratic below. Then, choose the intervals that contain the constants in the form $(ax + b)(cx + d); b \leq d$.

$$54x^2 + 33x - 10$$

A. $a \in [7.3, 9.9], \quad b \in [-5, -1], \quad c \in [5.9, 7.4], \text{ and } \quad d \in [5, 7]$

B. $a \in [17.3, 18.2], \quad b \in [-5, -1], \quad c \in [1.9, 5.9], \text{ and } \quad d \in [5, 7]$

C. $a \in [2.7, 4.3], \quad b \in [-5, -1], \quad c \in [16.7, 18.3], \text{ and } \quad d \in [5, 7]$

D. $a \in [0.8, 1.1], \quad b \in [-19, -7], \quad c \in [-0.2, 1.9], \text{ and } \quad d \in [41, 47]$

E. None of the above.

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9. Factor the quadratic below. Then, choose the intervals that contain the constants in the form $(ax + b)(cx + d); b \leq d$.

$$16x^2 + 32x + 15$$

A. $a \in [1.33, 2.64], \quad b \in [1, 6], \quad c \in [7.58, 8.67], \text{ and } \quad d \in [0, 7]$

B. $a \in [3.49, 4.26], \quad b \in [1, 6], \quad c \in [2.79, 4.2], \text{ and } \quad d \in [0, 7]$

C. $a \in [0.58, 1.65], \quad b \in [11, 17], \quad c \in [0.83, 1.1], \text{ and } \quad d \in [19, 28]$

D. $a \in [7.94, 8.37], \quad b \in [1, 6], \quad c \in [1.14, 2.49], \text{ and } \quad d \in [0, 7]$

E. None of the above.

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10. Solve the quadratic equation below. Then, choose the intervals that the solutions belong to, with $x_1 \leq x_2$ (if they exist).

$$-18x^2 - 12x + 7 = 0$$

A. $x_1 \in [-1.49, -0.59]$ and $x_2 \in [-0.22, 0.88]$

B. $x_1 \in [-26.38, -25.01]$ and $x_2 \in [25.08, 26.1]$

C. $x_1 \in [-0.57, 0.29]$ and $x_2 \in [0.7, 2.14]$

D. $x_1 \in [-6.86, -6.62]$ and $x_2 \in [17.57, 18.78]$

E. There are no Real solutions.
